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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,445	03/30/2004	Hong Zhong	124932-1	5441
6147	7590	01/04/2006	EXAMINER	
GENERAL ELECTRIC COMPANY GLOBAL RESEARCH PATENT DOCKET RM. BLDG. K1-4A59 NISKAYUNA, NY 12309			RONESI, VICKEY M	
			ART UNIT	PAPER NUMBER
			1714	

DATE MAILED: 01/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action
Before the Filing of an Appeal Brief**

Application No.

10/814,445

Applicant(s)

ZHONG, HONG

Examiner

Callie E. Shosho

Art Unit

1714

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 20 December 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☐ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☒ The Notice of Appeal was filed on 12/20/05. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☒ They raise the issue of new matter (see NOTE below);
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: see attachment. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____.

Claim(s) objected to: _____.

Claim(s) rejected: 1-13, 15 and 27-40.

Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____.
13. ☐ Other: _____.

Callie E. Shosho
Primary Examiner
Art Unit: 1714

Attachment to the Advisory Action

1. Please note that while Examiner Ronesi is on leave, Examiner Shosho is responding to the after-final amendment filed 12/20/2005. All future correspondence will be with Examiner Ronesi.

2. Applicants' amendment filed 12/20/05 has been fully considered but the amendment has not been entered given that the amendment raises new issues which would require further consideration and search.

(a) The amendment raises new issues that would require further consideration under 35 USC 112, first paragraph.

Specifically, claims 29, 30, 34, and 35 have been amended to recite that the composition "is capable of forming a film that has a bond line thickness". It is the examiner's position that this phrase fails to satisfy the written description requirement under 35 USC 112, first paragraph since there does not appear to be a written description requirement of the cited phrase in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163. Applicant has not pointed to any portion of the specification, and examiner has not found any support for this phraseology in the specification as originally filed.

It is noted that while paragraph 22 of the specification as originally filed provides support to recite bond line thickness and paragraph 38 of the specification as originally filed provides support to recite that the composition forms a film, there is nothing in the specification as originally filed that disclose that it is the film that has the bond line thickness. That is, there is no

disclosure in of the specification as originally filed regarding any connection or relationship between film and bond line thickness.

Further, claim 33 has been amended to recite that the “maximum particle size is in a range from about 0.01 microns to about 0.254 microns”. It is the examiner’s position that this phrase fails to satisfy the written description requirement under 35 USC 112, first paragraph since there does not appear to be a written description requirement of the cited lower limit of the maximum particle size in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163.

It is noted that paragraph 22 states that the maximum particle size is between 0.1-1 times that of the bond line thickness and that the bond line thickness is 0.01 mils to 5 mils or 0.01 to 2 mils which corresponds to 0.254 microns – 127 microns or 0.254 microns – 50.8 microns. Thus, given the relationship between maximum particle size and bond line strength, while there is support to recite values of maximum particle size, for instance, of 0.0254 (0.1×0.254), 12.7, 5.08, 0.254 (1×0.254), 127, and 50.8 microns, there is no support to recite that the lower limit of the maximum particle size is 0.01 microns.

(b) The amendment raises new issues that would require further search.

Specifically, claim 29 has been amended to recite bond line thickness of 0.254 to 127 microns while claim 30 has been amended to recite bond line thickness of 0.254 to 50.8. Given that previously claim 29 required bond line thickness of about 0.001 to about 1 micron and claim 30 required bond line thickness of about 0.001 to about 0.1 microns, it is clear that the amendment to claims 29 and 30 would require new searches.

It is noted that even if the amendment were entered, the present claims would not be allowable for the following reasons.

Firstly, applicants' amendment does not overcome all the 35 USC 112, first paragraph rejections as set forth in paragraph 4 of the office action mailed 11/1/05.

Specifically, with respect to claims 1, 31, 39, and 40, the examiner previously argued that with respect to the phrase "a dissipation factor of less than about [0.01 or 0.001] at about 10 kHz", there was no support in the specification as originally filed for the recitation of the frequency.

Applicants argue that support for such recitation of frequency is found in Table 1, page 18 of the present specification. However, while the Table does recite frequency of 10 kHz in connection with the recited dissipation factors, this only provides support for the recitation of the frequency with respect to the specific dissipation factors recited in the Table not the broad disclosure of dissipation factor set forth in present claims 1, 31, 39, and 40.

With respect to claims 15 and 32, the examiner's position remains that while there is support to recite average particle size of 0.01 to about 25 microns, there is no support for the endpoint "less than 1 micron". The broad disclosure of average particle size of 0.01 to about 25 microns does not provide support for the specific recitation of an upper limit of 1 micron. With respect to applicants' suggestion to amend the upper limit of average particle size in claims 15 and 32 to 0.4 microns based on the disclosure in examples 2 and 3 of the present specification, it would appear that such change would overcome the 35 USC 112, first paragraph rejection with respect to these claims.

It is further noted that if the amendment were entered, the 35 USC 112, first paragraph rejections with respect to claims 33, 29 and 30, 34, and 35 found on pages 3-4 of the office action mailed 11/1/05 would be overcome as would the 35 USC 112, second paragraph rejection of record. However, it is noted that the amendment would also precipitate new rejections against these claims under 35 USC 112, first paragraph as described in paragraph (a) above.

Secondly, applicants' amendment and arguments would not overcome the 35 USC 102/103 and 35 USC 103 rejections against the present claims for the reasons of record.

While it is agreed that there is no explicit disclosure in Misra et al. '910 (U.S. 2003/0027910) or Misra et al. '116 (U.S. 2003/0187116) of ratio of liquid metal to particulate filler or dissipation factor as required in present claim 1, given that Misra et al. '910 and Misra et al. '116 each disclose broad amounts of filler and liquid metal that overlap the amounts presently claimed and given that Misra et al. '910 and Misra et al. '116 each disclose utilizing the composition comprising liquid metal, particulate filler, and resin as thermal interface material for use in electronic components such as semiconductors which is the same use as the composition of the present invention, it would have been obvious to one of ordinary skill in the art to utilize effective relative amounts of liquid metal and particulate filler within the disclose range to obtained desirable properties including dissipation factor as presently claimed.

Applicants also argue that neither Misra et al. '910 nor Misra et al. '116 are relevant references against the present claims given that neither discloses composition that cures.

Art Unit: 1714

However, applicants' argument is not understood given that paragraph 26 of Misra et al. '910 and paragraph 48 of Misra et al. '116 each disclose that the composition is in fact cured.

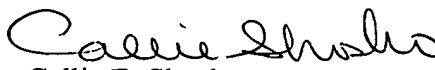
Applicants also argue that neither Misra et al. '116 or Murayama et al. disclose particulate filler having average particle size in a range from 0.01 microns to less than 1 micron as required in present claims 15 and 32.

However, it is agreed that Misra et al. '116 do not disclose average particle size as presently claimed which is why Misra et al. '116 is used in combination with Murayama et al. It is noted that Murayama et al. disclose using particulate filler with average particle size less than 20 microns, preferably 0.1-10 microns, which overlaps the average particle size of claims 15 and 32.

Applicants also argue that there is no motivation to combine Misra et al. '116 with Murayama et al.

However, given that Murayama et al. is drawn to curable coating composition comprising conductive particulate filler wherein the coating is used with semiconductors as is Misra et al. '116 and given that Murayama et al. disclose motivation for combining the references, namely, that the use of particulate filler with specific average particle size prevents settling of the filler, it is the examiner's position that there is proper motivation to combine the references.

CS
12/30/05


Callie E. Shosho
Primary Examiner
Art Unit 1714